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Office of Research and Development

BOARD OF SCIENTIFIC COUNSELORS
HUMAN HEALTH SUBCOMMITTEE

Conference Call Summary
April 8, 2005
3:00 p.m.–5:00 p.m. EDT

DRAFT

Welcome

Dr. James Klaunig, Chair, Human Health Subcommittee

Dr. Klaunig welcomed participants to the conference call. After a roll call, he explained that the purpose of the conference call was to review the draft program review report for the Human Health Research Program, written by the members of the U.S. Environmental Protection Agency's (EPA) Board of Scientific Counselors (BOSC) Human Health Subcommittee. Additions, deletions, modifications and clarifications to the document were discussed in detail. The Subcommittee also discussed the overall tone of the report.

Ms. Virginia Houk, the Human Health Subcommittee Designated Federal Officer, requested that the lead authors for each of the Long-Term Goal (LTG) sections of the report emphasize some of the major points, strengths, and challenges during the course of their discussion for inclusion in the report's Executive Summary.

Long-Term Goal 1—Use of Mechanistic Information in Risk Assessment

Dr. Joseph Landolph, Associate Professor of Molecular Microbiology, Immunology, and Pathology, Norris Comprehensive Cancer Center, University of Southern California

Dr. Landolph, lead writer for LTG 1, stated that the Subcommittee wanted to convey confidence and a positive attitude with respect to the use of mechanistic data in risk assessment. He cited a number of examples of mechanistic research found within the Human Health Research Program (e.g., those related to dioxin, atrazine, and disinfection by-products). The Subcommittee agreed that the benefits to the public were clear and demonstrable; research in the areas of conazoles and atrazine were noted examples.

Dr. Landolph commented that stakeholder involvement was well represented and that effective communication occurred among the stakeholders. The program offices (i.e., Air, Water, Pesticides, and Toxics) and the regions communicate with EPA's Office of Research and Development (ORD) and in turn, ORD disseminates information throughout the Agency. Dr. Landolph was particularly impressed with the ability of the younger scientists to talk to outlying stakeholders and serve them. He cited industry stakeholders and the conazole study as a good example of this, characterizing it as a flexible and dynamic matrix.

The Subcommittee also observed a good level of coordination external to the Agency. For example, there was evidence of an effective collaboration with the National Institute of Environmental Health Sciences on an arsenic project. Dr. Landolph noted that EPA employs several mechanisms to bring new expertise to their programs. In particular, he referred to the mechanisms to temporarily hire individuals and bring expertise to the Agency through the use of Intergovernmental Personnel Acts (IPAs) and Cooperative Research and Development Agreements (CRADAs). A list of these types of interactions between EPA and other organizations was not provided at the face-to-face meeting; Subcommittee members agreed that such a list would have been beneficial. Dr. Landolph indicated that there appears to be a high level of cooperation and teamwork within and between ORD programs.

The Subcommittee rated the overall quality of programs favorably and agreed that the Human Health Research Program's performance was well defined. Subcommittee members expressed confidence that mechanistic research is ongoing and the resultant data are used in risk assessment. These points are articulated clearly in the report.

Dr. Klaunig asked Dr. Landolph and the lead writers for the other LTGs to suggest text from the report that could be included in the Executive Summary. Dr. Landolph suggested that the following text from the section on LTG1 be included in the Executive Summary:

- In the second paragraph under the "Performance" section of LTG1, the block of text that starts with the sentence "(5) The EPA has also been a leader in developing new cancer risk assessment guidelines incorporating all biologically relevant information…" and ends with the sentence "The BMDS is now utilized by 2,000 scientists from industry, academia, and governments in 80 countries."

- The last sentence of the following paragraph, which reads "EPA should be commended for its scientific leadership in resolving uncertainties for dioxin risk assessment."

- The fourth paragraph under the "Performance" section of LTG1, which starts with the following sentence: "ORD's Program has clearly articulated its focus and the rationale behind its approach to study the theme of use of mechanistic data in risk assessment."

- The first paragraph under the "Progress to Meet the Long-Term Goals" subsection of the "Performance" section, which starts with this sentence: "The Program has made significant progress toward each of its long-term goals."

- The first sentence of the next paragraph, which reads "Certainly, within the areas of arsenic, dioxins, atrazines, conazoles, and luteinizing hormones, this research is clearly addressing key research questions for each area."

- The first sentence of the fourth paragraph in the "Use of Outputs by Stakeholders" subsection of the "Performance" section, which reads as follows: "The Program has been effective in developing outputs that support the risk assessment/risk management process."

- The first sentence in the "Leadership" section, which reads "The team of veteran scientific administrators (Drs. Reiter, Tilson, Cupitt, Birnbaum, Highsmith, Nesnow) provides professional leadership to the Human Health Research Program and ORD scientists in EPA."

Subcommittee members discussed at great length the merits of recognizing individuals' contributions and naming certain individuals in the text of the report. Dr. Landolph emphasized that Subcommittee members thought that the Program's leadership was very effective. He supported including the names of certain outstanding individuals who have leadership roles and giving them credit in the report. These individuals are highly regarded and are recognized as experts in their respective fields. Additionally, they have demonstrated exemplary leadership during the course of their careers. This veteran leadership has stabilized younger scientists and strengthened the Program.

After additional discussion, Subcommittee members agreed not to include individual names in the report, for a number of reasons. EPA generally does not call out individuals in these reports, and if the report were to include individual names, it would be extremely difficult to determine the skill set (managerial/scientific) in defining leadership. To ensure consistency throughout the document, the leadership of the Agency was highlighted in general terms.

Dr. Timothy Buckley, Associate Professor in the Department of Environmental Health Sciences at Johns Hopkins University, asked about how the Subcommittee should define leadership for purposes of this report. Subcommittee members discussed the attributes of leaders/leadership and whether it is possible to set a standard using metrics to define leadership. The discussion included possible metrics such as accomplishments, productivity in terms of grants and publications, being at the forefront of one's respective field, and conducting research that defines the science. Dr. Landolph observed that the leadership within EPA seems to be bifurcated into administrative and scientific arenas; Subcommittee members recognized that strong leadership in both areas is necessary for an optimal research program. To ensure consistency throughout the report, it was agreed that the Program's overall leadership would be complimented in lieu of highlighting specific individuals. Dr. Landolph suggested that statements to this effect be included in the Executive Summary.

It was suggested that the report recommend that EPA be concerned with leadership transition as senior individuals retire or move on. Some thought should be given to culturing and developing individuals for leadership positions.

Dr. Klaunig asked if it would be appropriate to include a series of bullet points at the beginning of each LTG to identify their respective strengths and weaknesses. Subcommittee members decided that the Executive Summary should include common strengths and challenges across the LTGs and also specify them for each individual LTG. This will avoid redundancy and make it unnecessary to add bullet points to the beginning of each LTG. Subcommittee members also agreed that, in general, there was not a clearly stated rationale for each of the LTGs. Instead, as Dr. Buckley stated, there was a reliance on the fact that "others" indicated that each of the LTGs were important. Dr. Landolph, however, noted that LTG 1 appeared to have a very clear rationale. He stated that mechanistic data are imperative for risk assessment and that the goal seemed self-explanatory. Dr. Elaine Symanski, Associate Professor at the University of Texas

Health Science Center School of Public Health, also agreed that the rationale for LTG 1 was clear, but suggested that it was not articulated in the materials provided to Subcommittee members before the face-to-face meeting. Subcommittee members indicated that the rationale for each of the LTGs became more apparent after listening to the verbal presentations and talking directly to the scientists at the face-to-face meeting. The Subcommittee recommended that the Agency develop and articulate clear and strong rationales for each LTG. This recommendation will be stated in the Executive Summary.

The group briefly discussed if there was a way to weight their criticisms in the written report—some criticisms were merely noted by the reviewers while others warrant corrective action. Subcommittee members reached consensus in determining that their role includes assigning a grade for work that was done as well as assessing the impacts of what was not done. The BOSC has the responsibility of emphasizing things that are working well and pointing out things that require improvement to ensure the Program's success. A primary role of the Subcommittee is to provide advice, criticism, and insights to strengthen the Program.

Long-Term Goal 2—Aggregate/Cumulative Risk
Dr. Michael Jayjock, Senior Analyst, The LifeLine Group

Dr. Jayjock indicated that the important points from the LTG 2 section of the draft report were summarized accurately in the Executive Summary. The statements reflect the strengths and weaknesses of the Programs as evaluated by the Subcommittee. The Subcommittee agreed that each of the LTG sections in the final report would be consistent with one another and that individuals would not be named in the report. Dr. Jayjock stated that rationale for LTG 2 was clear and unambiguous.

Dr. Symanski commented that the draft report emphasized that there are thousands of existing chemicals that may present exposure risks to people. If this point is to be emphasized, then there should be an acknowledgment of the difficulty that a single agency has in addressing all of them. Subcommittee members agreed that some text should be added to distinguish the differences between being risk-based in approaching the regulation of chemicals versus not being risk based, and to acknowledge that the European Union is taking a different approach.

Dr. Jayjock commented that he combined the "Quality" and "Performance" sections of LTG 2 when writing this portion of the report. He noted that the report refers to the quality of publications stemming from EPA research. Members of the Subcommittee discussed the value of using peer-reviewed journal articles as performance evaluation tools. Because no journal analysis was undertaken for this review, panel members discussed some concerns about judging the quality and quantity of the Program's publications and its publication reputation. Subcommittee members also commented that perhaps not enough credit was given to the Program for its use of innovative statistical and modeling approaches in rating its performance. These new approaches have the potential to provide leadership and to define a research direction. Subcommittee members agreed to include a few concise examples of cutting-edge research in the report.

Long-Term Goal 3—Susceptible Subpopulations
Dr. Timothy Buckley, Associate Professor, Department of Environmental Health Sciences, Johns Hopkins University

There was general consensus that the Subcommittee was not provided with appropriate review materials prior to the meeting (e.g., some of the materials were outdated). Subcommittee members again noted that, in general, the rationale for each LTG was not clearly articulated in the advance materials, but at the face-to-face meeting, questions regarding the rationale for the LTGs were resolved.

Dr. Buckley pointed out apparent discrepancies between different sections of the draft report with regard to the strength and benefits of multidisciplinary interactions within and between the LTGs. The Executive Summary recommends that the Program embrace the multidisciplinary interactions concept, but also identifies this as one of the strengths of the Program. After a brief discussion, Subcommittee members recognized that interactions within each LTG are taking place, but it would be beneficial to formalize them across the LTGs. Dr. Landolph noted that the GST polymorphism study crosses the bridge from LTG 1 to LTG 3.

There was general agreement that the written documentation and presentations from the face-to-face meeting did not recognize that much of the Program's strength is derived from interactions. The Subcommittee discussed including statements within the report to the effect that a model for recognizing and encouraging interactions should be developed. Dr. Landolph suggested that a retreat for the scientists or Program Directors could be an appropriate model. Subcommittee members also agreed that some recommendation statements be drafted to indicate that the Program should formally recognize in some way how the interactions occur and the benefits of these interactions.

Dr. Buckley indicated that the Subcommittee did not have access to previous reviews and critiques of the Human Health Research Program. These would have been valuable to the Subcommittee throughout the deliberations and in writing the report. He suggested that some guidance along these lines be included in the document so that future reviewers have access to these materials. It also was noted that the presentations given at the face-to-face meeting did not dovetail with the review criteria. The Subcommittee's efforts would have been much easier if the materials had been more directed toward previous reviews and if they were consistent and up to date. Dr. Symanski noted that EPA is planning to revise the *Human Health Multi-Year Plan* (MYP) and intends to incorporate feedback from the BOSC review as the basis for MYP updates. This may account for some of the outdated materials.

Dr. Buckley expressed concern that the parameters for judging quality and performance were still an issue. The Subcommittee recognized that high-quality publications were being produced as a result of the Program's research and exchanged ideas about other ways in which performance could be reported in a qualified and quantified manner.

Dr. Jayjock suggested drafting a short general piece for the report explaining how the reviewers would have benefited from an understanding of the number of publications that resulted from the research and whether any of them are considered seminal (e.g., did any papers have an impact on

the field, or did they show major leadership in terms of changing the field or leading the field?). The Subcommittee agreed that an additional section is needed at the end of the Executive Summary to explain the needs of evaluators for reporting on the quality of the Program. Given the difficulties faced by the Subcommittee members, Dr. Symanski asked if they should request additional information before finalizing the report. After a brief discussion, the Subcommittee agreed that it was not necessary to request additional information.

Dr. Hugh Tilson, EPA's National Program Director for the Human Health Research Program, informed the group that the Agency anticipated the issue of trying to judge the quality or impact of the research. There have been negotiations with a contractor to conduct a bibliometric analysis of the research (both the extramural research funded under the Science to Achieve Results Program, or STAR, and the intramural research). The analysis was not available in time for the review, due to contractual issues; however, it should be ready by May. It was agreed that EPA's recognition of this need would be noted in the final report. Dr. Buckley agreed to draft some additional paragraphs regarding quality and performance.

The Subcommittee rated the leadership favorably, and in terms of children's research, it appears that the Program is providing leadership in the development of measurement methods and modeling approaches to determine exposures. Subcommittee members still struggled with the issue of defining leadership for purposes of this review. Dr. Landolph offered the following attributes of a good leader: (1) sets appropriate scientific goals; (2) defines objectives to meet these goals; (3) fulfills statutory mandates; and (4) serves and works with stakeholders, regions, and other offices. Dr. Buckley agreed to rework the "Leadership" section of LTG 3 taking into account the aforementioned criteria. He suggested that LTG 3 may be an example of a component of the Program that has more diffuse leadership. He noted, however, that although a single, outstanding individual does not come to mind, this does not indicate weak leadership. The work coming out of the program under the present leadership is novel, innovative, and important research.

The Subcommittee decided to recommend that EPA plan for leadership succession within the Program, both in the technical and the management arenas. There seems to be a distinct gap between the number of senior, established scientists and younger researchers. This could seriously affect leadership in the future.

Long-Term Goal 4—Evaluation of Public Health Outcomes
Dr. Elaine Symanski, Associate Professor, University of Texas Health Science Center School of Public Health

Dr. Symanski noted that LTG 4 was both easy and difficult to review because only one poster was presented in relation to this LTG. The relevancy of LTG 4 was readily apparent and is extremely important for ORD. Evaluating public health outcomes is consistent with EPA's mission and is responsive to a directive issued by a former EPA Administrator. Dr. Symanski also stated that this LTG may play an important role in the future for ORD by providing a mechanism for the research activities of this Program and others to be integrated and ultimately evaluated in terms of their impact on environmental health.

Dr. Symanski stated that the quality and performance of the Program were difficult to evaluate in part because the Program is so new. A Memorandum of Understanding with the Centers for Disease Control and Prevention was established, and based on the materials provided to Subcommittee members, databases are being created to store data related to LTG 4. None of the formal presentations given during the face-to-face meeting, however, addressed these databases.

Dr. Symanski noted that additional articulation of the LTGs would be beneficial. She also commented that the Human Health Research Program receives a relatively small proportion of the overall EPA budget. Although its funding was increased last year, the Program will need additional increases in its budget to ensure success. Additionally, the Program would benefit from the addition of staff, particularly in the areas of epidemiology and biostatistics. This was noted in the report. The leadership appears to have the appropriate background to launch a program of this nature, but additional staff with public health expertise would certainly be helpful.

Incorporation of Testimonials In Report
Mr. Harvey Clewell, Director, Center for Human Health Assessment, CIIT Centers for Health Research
Dr. Donald Mattison, Senior Advisor to the Directors of the National Institute of Child Health and Human Development and the Center for Research for Mothers and Children, National Institutes of Health

The Subcommittee discussed whether and how to incorporate the testimonials into the final report. The content of some of the testimonials was included elsewhere in other sections of the document (e.g., testimonials were included in the discussion of stakeholder involvement in LTG 1). Subcommittee members also discussed whether the testimonials required a separate section in the report. Ms. Houk commented that the intent is to ensure that the information presented in the testimonials is incorporated into the document. If inserted into the LTG sections appropriately, this should be adequate. If not, a brief or specific example could be presented in the Executive Summary. The consensus was that a very brief, separate section at the end of the report to acknowledge the value of the testimonials would not be redundant. Drs. Mattison and Clewell agreed to draft a few short paragraphs addressing the testimonials.

Executive Summary
Dr. James R. Clark, Environmental, Safety, Civil & Marine Division, Exxon Mobil Research and Engineering Company

Dr. Clark explained that the important comments from each of the LTG sections were included in the Executive Summary. Dr. Landolph suggested that the Executive Summary emphasize the diversity of skills that characterize the Subcommittee to lend credence to their conclusions and recommendations. Other suggestions included grouping the positive aspects of the Program with one another and the negative aspects together to make the report more coherent. It also was noted that the "Leadership" section needs to capture the idea of generic leadership strategies, the concepts of mentorship and of developing a long-term plan for succession, and the idea of bringing people up through the ranks.

Dr. Klaunig asked each of the section leads to highlight the strengths and weaknesses of their respective LTG and provide short bullet points for inclusion in the Executive Summary. Ms. Houk indicated that the comments and rewritten sections must be completed within 2 weeks. Dr. Klaunig thanked the members of the Subcommittee for their hard work and dedication and asked for comments from the public. As there were no questions or comments from the public, the conference call was adjourned at 5:02 p.m.

Additional Needs and Action Items

Action items from the conference call are as follows:

- The section leads will provide Dr. Klaunig with short bullet points that highlight the strengths and weaknesses of each of the LTGs so that they can be incorporated into the Executive Summary.
- Dr. Klaunig will incorporate important points from each of the LTGs into the Executive Summary that either were identified during this conference call or will be forwarded to him by Subcommittee members.
- Dr. Buckley agreed to draft some additional paragraphs regarding quality and performance for LTG 3.
- Dr. Buckley agreed to rework the "Leadership" section of LTG 3 taking into the account the criteria for leadership proposed by Dr. Landolph.
- Dr. Mattison and Mr. Clewell agreed to draft a few short paragraphs addressing the testimonials for inclusion in the report.

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